

REMARKS/ARGUMENTS

By this amendment, Claims 1, 2, 34, 38, 39, and 41 are amended and no claims are added or canceled. Hence, Claims 1, 2, 4-18, 20-32, and 34-47 are pending in the application.

**I. SUMMARY OF THE TELEPHONE INTERVIEW**

The Examiner is thanked for the telephone interview conducted on September 11, 2008. In the interview, the Examiner and representatives of the Applicants agreed that the amendment to Claim 1, which is also made to Claims 38 and 39, would overcome the rejection of Claim 1 under 35 U.S.C. § 102(b) based on the *Roccaforte* reference. Representatives of the Application also agreed to amend Claim 34 to make it more clear.

**II. SOLE REJECTION**

Claims 1, 2, 4-18, 20-32, and 34-47 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by International Publication Number WO 01/33427 to Roccaforte ("*Roccaforte*").

**A. CLAIM 1**

Claim 1 recites:

A machine implemented method comprising:  
 accessing rows in a database table, wherein:  
     each row in the database table corresponds to a dimension-value combination for a set of one or more of dimensions;  
     the database table is composed of a plurality of segments, wherein each segment of the plurality of segments (a) corresponds to a different contiguous range of dimension-value combinations and (b) includes a different set of one or more rows, wherein at least one segment of the plurality of segments includes multiple rows;  
     **the boundaries of each segment, of the plurality of segments, are established based on gaps in dimension-value combinations associated with rows stored in the database table;**  
     **each gap covers at least one valid dimension-value combination that is not associated with any row in the database table;**

the segment into which a row of the database table is stored is the segment that corresponds to the contiguous range that includes the dimension-value combination to which the row corresponds; within each segment of the plurality of segments, rows of the database table are stored at locations based on the dimension-value combination to which the rows correspond; and wherein accessing rows in the database table includes, in response to receiving a request that indicates a particular dimension-value combination: using the particular dimension-value combination for determining a segment of the plurality of segments that stores a particular row that corresponds to the particular dimension-value combination; and accessing the particular row within the segment.

At least the above-bolded features of Claim 1 is not taught or suggested by *Roccaforte*.

That feature of Claim 1 recites: “the boundaries of each segment, of the plurality of segments, are established based on gaps in dimension-value combinations associated with rows stored in the database table.” The Office Action cites page 29, lines 9-11 and page 31, lines 1-6 of *Roccaforte* for allegedly disclosing this feature of Claim 1. This is incorrect. The Office Action even states that a “database table can be ‘subdivided’ along this gap between ‘city-level’ dimensions and ‘state-level’ dimensions” (page 3). Thus, a subdivision of a database table is based on the granularity of a dimension, **not** based on dimension-value combinations associated with rows **stored** in the database table, as Claim 1 requires.

The Office Action also incorrectly asserts that page 31, lines 1-6 of *Roccaforte* “clearly shows wherein the boundaries are based on ‘gaps’ in the dimension values.” This interpretation of *Roccaforte* is clearly incorrect. Instead, this portion of *Roccaforte* states:

According to one approach, the cube is subdivided along a hierarchical dimension based on the dimension key values of a non-finest level of the hierarchical dimension. In the ‘geography’ example, a particular non-final level of the geographic dimension, such as ‘state’, may be selected, and the cube may be subdivided along that dimension based on the mapping between city-level cells and state-level dimension key values. Unlike fixed-width tiles, tiles created in this manner have a variable width along the dimension.

Again, the subdividing of a cube along a particular dimension is based on the granularity of the particular dimension. The subdividing has nothing to do with the actual values in the cube.

Claim 1 additionally recites that “each gap covers at least one valid dimension-value combination that is not associated with any row in the database table.” The so-called “gaps” in *Roccaforte* do not even correspond to valid dimension-value combinations.

Because *Roccaforte* fails to teach or suggest all the features of Claim 1, Claim 1 is patentable over *Roccaforte*. Reconsideration and withdrawal of the rejection of Claim 1 under 35 U.S.C. § 102(b) is therefore respectfully requested.

#### B. CLAIM 34

Present Claim 34 recites:

A computer-readable storage medium that is readable by a database system, having stored therein at least:  
 a database table containing a plurality of data items on the computer readable media that correspond to locations associated with at least one dimension value;  
 wherein each data item of the plurality of data items is stored in the table in an order dictated by a dimension value combination to which said each data item corresponds, wherein the dimension value combination, to which said each data item corresponds, corresponds to one or more dimension columns defined for the database table; and  
**wherein the database table (a) does not store values for the one or more dimension columns and (b) does not store values that are derived from dimension values associated with the one or more dimension columns.** (emphasis added)

At least the above-bolded feature of Claim 34 are not taught or suggested by *Roccaforte*. In contrast to Claim 34, the fact table of *Roccaforte* stores replacement values, which are derived from dimension values associated with one or more dimension columns.

In contrast to the assertion in the Office Action, the replacement values that are stored in a column of the fact table of *Roccaforte* are derived from dimension values associated with one

or more dimension columns. The following steps are performed to derive a replacement value from dimension key values.

- (1) Page 9, lines 19-21 of *Roccaforte* teaches that **a mapping exists between dimension key values and coordinate values.**
- (2) Page 11, lines 8-10 of *Roccaforte* teaches that a cube is divided into tiles **based on coordinate value ranges.**
- (3) Page 11, lines 22-25 of *Roccaforte* teaches that the position of a tile within a cube is referred to as the tile\_position of the tile and the tile\_position includes one “tile **coordinate value**” for each dimension.
- (4) Page 12, lines 22-25 of *Roccaforte* teaches that “a <tile\_position, local\_position> combination is derived for a cell value by determining the global coordinates of the cell to which the cell value belongs (**based on the dimension key value to coordinate value mappings**), and then applying the following equations” (emphasis added).
- (5) Page 13, lines 13-25 of *Roccaforte* teaches that a tile\_position-local\_position combination is reduced to a tile\_number-offset combination, which is then used as a replacement value within the fact table.

In other words, a tile\_number-offset combination (which is used as a replacement value) is derived from a tile\_position-local\_position combination, which is derived from coordinate values, which are derived from dimension key values. Therefore, the tile\_number-offset combination **is ultimately** derived from the dimension key values.

Based on the foregoing, because *Roccaforte* fails to teach or suggest all features of Claim 34, Claim 34 is patentable over *Roccaforte*. Reconsideration and withdrawal of the rejection of Claim 34 under 35 U.S.C. § 102(b) is therefore respectfully requested.

## C. CLAIM 38

Claim 38 recites the same feature, of Claim 1 discussed above, that renders Claim 1 patentable over *Roccaforte*. Therefore, Claim 38 is patentable over *Roccaforte* for at least the same reasons discussed above for Claim 1. Reconsideration and withdrawal of the rejection of Claim 38 under 35 U.S.C. § 102(b) is therefore respectfully requested.

## D. CLAIM 39

Claim 39 recites a similar feature of Claim 1 discussed above. Claim 39 recites “wherein the boundaries of each range, of the plurality of ranges, are determined based on gaps in dimension-value combinations associated with rows stored in the database table.” Claim 39 further recites that a segment is created for each range. Therefore, Claim 39 is patentable over *Roccaforte* for at least the same reasons discussed above for Claim 1.

Claim 39 further recites that the recited “plurality of ranges is determined such that the table includes rows that correspond to **every dimension-value combination that belongs to each range** of the plurality of ranges” (emphasis added). The cited portion of *Roccaforte* (i.e., page 9, lines 1 and 19-25) fails to teach or suggest that a plurality of ranges of dimension-value combinations is determined in such a way.

Because numerous features of Claim 39 are absent from *Roccaforte*, reconsideration and withdrawal of the rejection of Claim 39 under 35 U.S.C. § 102(b) is respectfully requested.

## E. DEPENDENT CLAIMS

The remaining claims not discussed thus far are dependent claims, each of which depends (directly or indirectly) on one of Claims 1, 34, 38 or 39 discussed above. Each of the dependent claims is therefore patentable over *Roccaforte* for the reasons given above for the claim on which it depends. In addition, each of the dependent claims introduces one or more

additional limitations that may independently render it patentable. However, due to the fundamental differences already identified and to expedite the positive resolution of this case, a separate discussion of all limitations that independently render the dependent claims patentable is not included at this time. The Applicants reserve the right to further point out the differences between the cited art and the novel features recited in the dependent claims.

### III. CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,  
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